

## ANTENNAS | PUCK-12 SERIES

# 2-IN-1 TRANSPORTATION & IOT/M2M ANTENNA

2400 – 7200 MHz; 2X2 Wi-Fi (MIMO), 7.5 dBi



						<b>APPLICATION AREAS</b> Urban Rural/Farm Marine Vehicle Meter
2400 – 2500 MHz 5000 – 7200 MHz	7.5 dBi	2.4 – 2.5 GHz 5.0 – 7.2 GHz	Omni-Directional	IoT	2X2 MIMO	
Machine to Machine	IP69K	-40°C to +80°C	Fire Resistant	Chemical Protection		
<ul style="list-style-type: none"> <li>• 2-in-1 high performance omni-directional antenna</li> <li>• Dual-band Wi-Fi, 2.4 GHz and 5 GHz frequency bands</li> <li>• Antenna supports Wi-Fi-6e/Wi-Fi-7/Bluetooth</li> <li>• 2x2 MIMO for improved performance</li> <li>• Robust, vandal resistant and waterproof enclosure (IP69K)</li> <li>• Ultra-versatile mounting options for easy installation</li> </ul>						

## Product Overview

Poynting's new PUCK range offers a small profile antenna that can be used in the IoT/M2M, Smart Meter, Smart Utilities, Transportation, Marine, and Agricultural/Farming markets. The PUCK-12 comprises a 2-in-1 antenna system within a single housing, featuring 2x2 MIMO Wi-Fi (Dual-band 2.4 GHz & 5 GHz). The antenna provides two separate dual-band Wi-Fi antennas offering concurrent 2.4 GHz, 5 GHz, and 6GHz bands, capable of 802.11n and 802.11ac/ax/be with 2x2 MIMO. The PUCK exceeds many competitors' performance due to the attention to the design of this high-performance antenna. The radiation patterns of all radiating elements provide an excellent balance between omnidirectionality, pattern diversity, and good radiation abilities at the desired elevation, which is often overlooked in such a small-size antenna. Despite its small size, this antenna provides excellent performance, especially at the higher frequency bands, where performance is critical for Wi-Fi throughput and connection stability.

## Features

- Small & Low-profile (Ø100mm x h 36mm)
- Features 2x Wi-Fi antennas
- Careful mechanical design provides ruggedness, corrosion, water and dust resistance (IP69K)
- Fire Resistant
- UV Stable Enclosure
- Easy installation; multi-implementation options available:
  - Spigot Mount
  - Magnetic Mount
  - Adhesive Surface Mount
  - Wall & Pole Mount

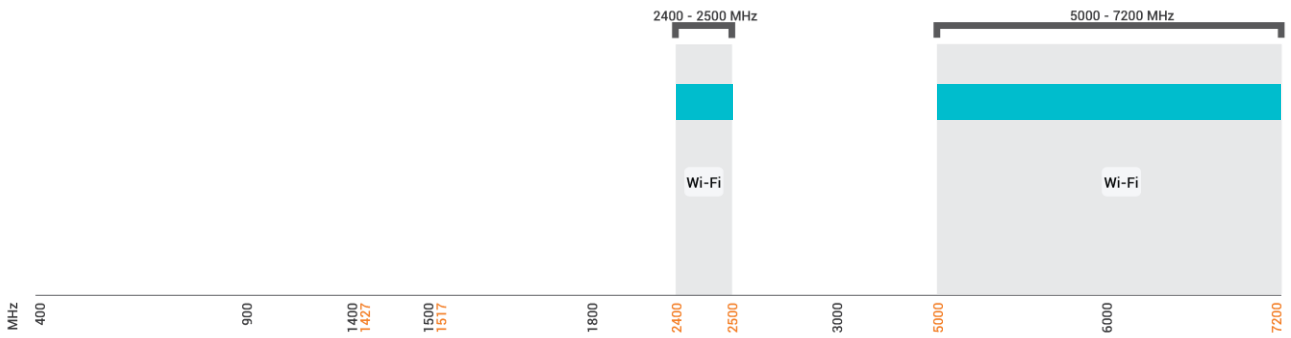
## Application Areas

- Smart utilities: Smart power, Gas & Water Metering
- Smart Buildings: Climate control, access control, security, irrigation
- Industrial factory automation, robotic machinery and other M2M systems
- Digital Signage
- Warehouses & Logistic systems
- Transport (Busses, Utility & Public Safety)
- Mining Vehicles & Machinery communications, telemetry and automation (M2M & IoT)
- Agricultural machinery
- Marine: small boats, yachts near to coastlines or inner waters



## Frequency Bands

The PUCK-12 is an omni-directional antenna that works from | 2400 – 2500 MHz | and | 5000 – 7200 MHz |



**Indicates the WI-FI bands on which PUCK-12 works**

## Antenna Derivatives

Product Order Code (SKU)	A-PUCK-0012-V2-01	A-PUCK-0012-V2-01-W
Radome Colour	Black	White
Radome Material	PC+ABS (Halogen free)	UV Stable ASA
Ports	2	2
SISO / MIMO	MIMO	MIMO
Coax Cable Type	RTK-031	RTK-031
Coax Cable Length	2m	2m
Connector Type	SMA (M) (RP-SMA adapter included)	SMA (M) (RP-SMA adapter included)
EAN	6009710928394	6009710928417
E-Mark Certification Number	E1*10R06/01*9551*00	E1*10R06/01*9551*00

\*The coax cable & connector are factory mounted to the antenna

## Electrical Specifications

<b>Frequency Bands:</b>	2400 – 2500 MHz 5000 – 7200 MHz
<b>Gain (Max) Port 1 &amp; 2:</b>	5 dBi @ 2400-2500 MHz 7.5 dBi @ 5000-7200 MHz
<b>VSWR Port 1 &amp; 2:</b>	≤2:1 Across 90% of the bands
<b>Feed Power Handling:</b>	10 W
<b>Input Impedance:</b>	50 Ohm (nominal)
<b>Polarisation:</b>	Linear Vertical
<b>Coax Cable Loss:</b>	0.91 dB/m @ 2400 MHz 1.65 dB/m @ 5800 MHz
<b>DC Short:</b>	Yes

## Product Box Contents

<b>Antenna:</b>	A-PUCK-0012-V2-01
<b>Mounting Bracket:</b>	Ø20 Threaded Spigots (Up to 60mm clamping thickness), Adhesive Surface Mounting & Magnetic Mount
<b>Adapters:</b>	2x RP-SMA(M) To SMA (F)

## Mechanical Specifications

<b>Product Dimensions</b>	Ø99.3 mm x 36 mm
<b>Packaged Dimensions:</b>	150 mm x 150mm x 120mm
<b>Weight:</b>	0.376kg
<b>Packaged Weight:</b>	0.553kg
<b>Mounting Type:</b>	Ø20 Threaded Spigot, Pole, Wall, Surface and Magnetic mount

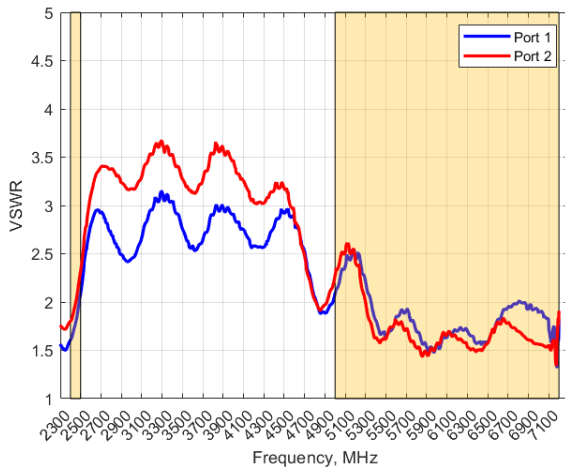
## Environmental Specifications, Certification & Approvals

<b>Wind Survival:</b>	<220 km/h
<b>Temperature Range (Operating):</b>	-40°C to +80°C
<b>Environmental Conditions:</b>	Outdoor/Indoor
<b>Water Ingress Protection Ratio/Standard:</b>	IP69K
<b>Salt Spray:</b>	MIL-STD 810G/ASTM B117
<b>Operating Relative Humidity:</b>	Up to 98%
<b>Storage Humidity:</b>	5% to 95% - non-condensing
<b>Storage Temperature:</b>	-40°C to +80°C
<b>Enclosure Flammability Rating:</b>	UL 94-HB
<b>Impact Resistance:</b>	IK 10
<b>Product Safety &amp; Environmental:</b>	Complies with CE and RoHS standards

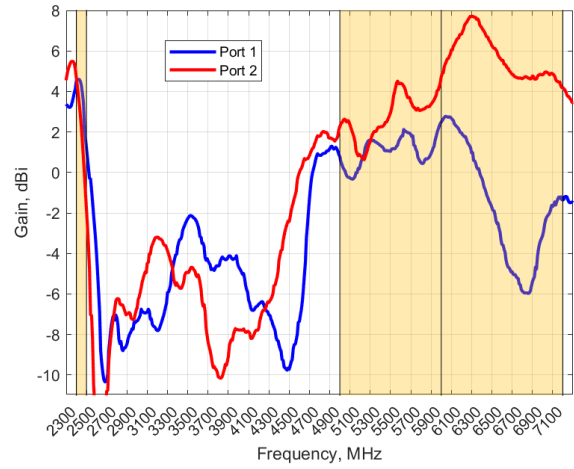


## Antenna Performance Plots

**VSWR: Wi-Fi Antenna**



**GAIN (Excluding Cable Loss): Wi-Fi Antenna**



### Voltage Standing Wave Ratio (VSWR)\*

VSWR is a measure of how efficiently radio-frequency power is transmitted from a power source, through a transmission line, into a load. In an ideal system, 100% of the energy is transmitted which corresponds to a VSWR of 1:1.

The PUCK-12 delivers superior performance across all bands with a VSWR of  $\leq 2:1$  across 90% of the bands.

*\*Measured with 2m low loss cable, 650 x 650 mm ground plane, and unused ports terminated with 50Ω load.*

### Gain\* in dBi

7.5 dBi is the peak gain across all bands from 2400 – 2500 MHz & 5000 – 7200 MHz

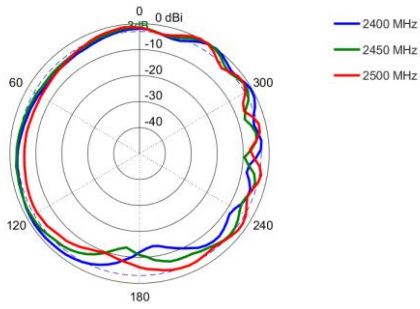
Gain @ 2400 – 2500 MHz: 5 dBi

Gain @ 5000 – 7200 MHz: 7.5 dBi

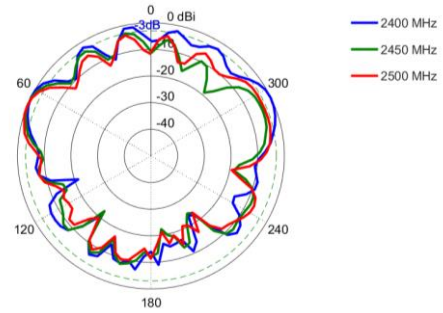
*\*Antenna gain measured with polarisation aligned standard antenna*

**Radiation Patterns**

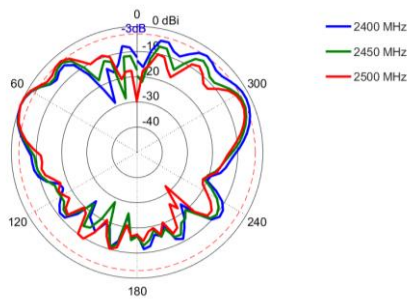
**Azimuth: 2400 – 2500 MHz**



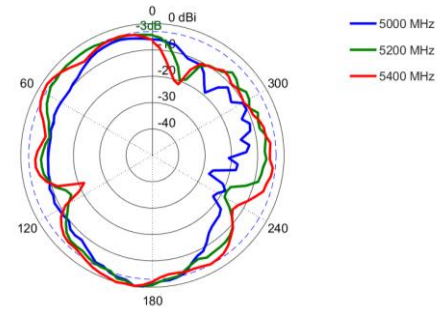
**Elevation 1: 2400 – 2500 MHz**



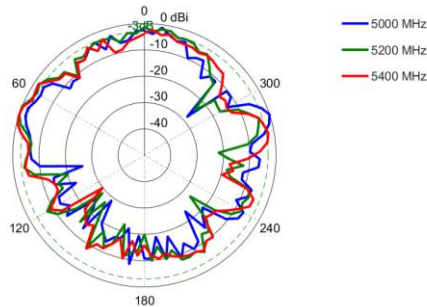
**Elevation 2: 2400 – 2500 MHz**



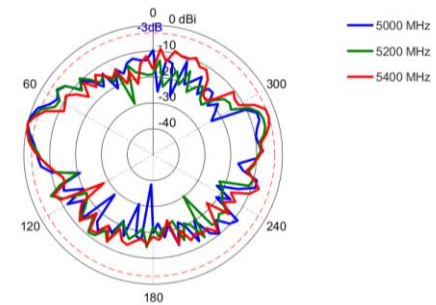
**Azimuth: 5000 – 5400 MHz**



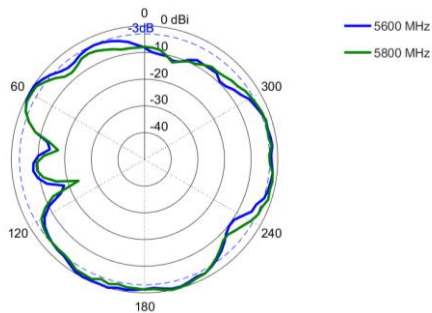
**Elevation 1: 5000 – 5400 MHz**



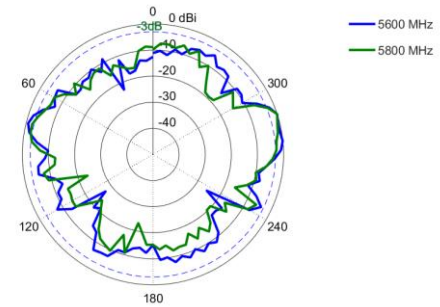
**Elevation 2: 5000 – 5400 MHz**



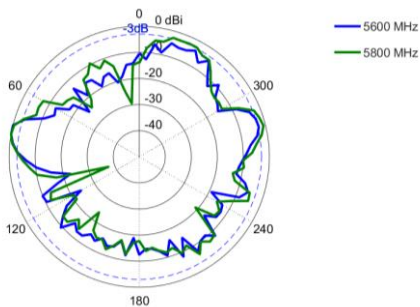
**Azimuth: 5600 – 5800 MHz**



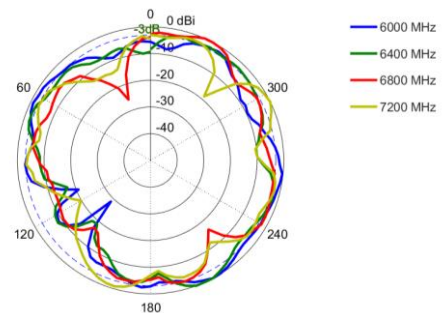
**Elevation 1: 5600 – 5800 MHz**



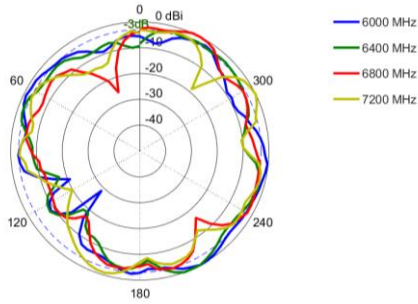
**Elevation 2: 5600 – 5800 MHz**



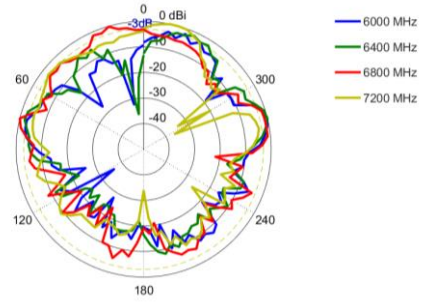
**Azimuth: 6000 – 7200 MHz**



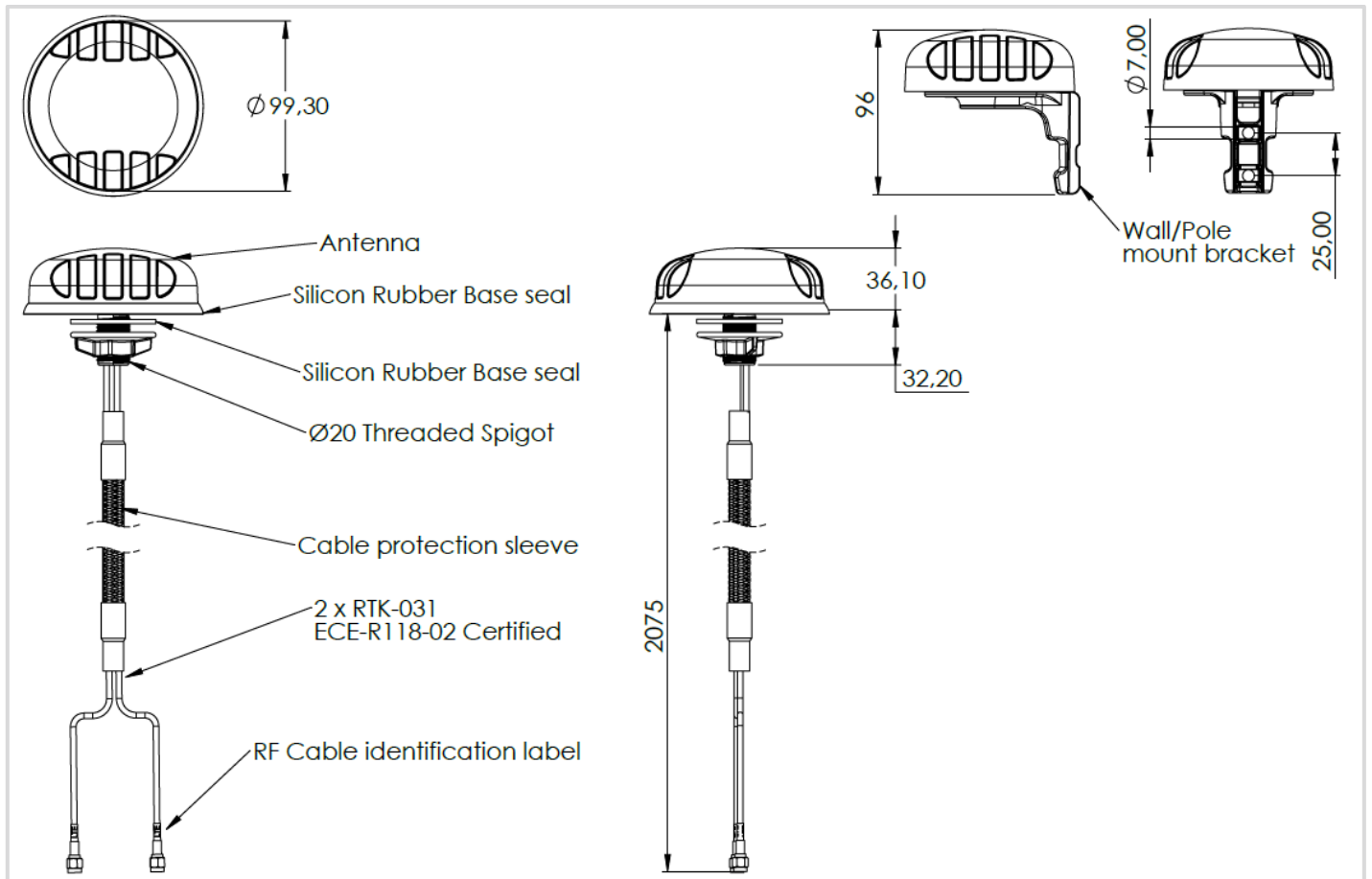
**Elevation 1: 6000 – 7200 MHz**



**Elevation 2: 6000 – 7200 MHz**



**Technical Drawings**

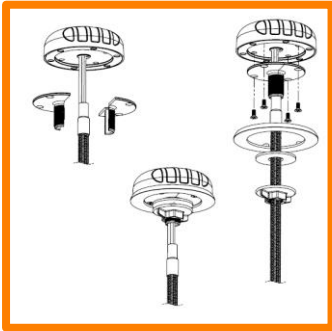


## Mounting Options

### Many Mounting Possibilities – included as standard

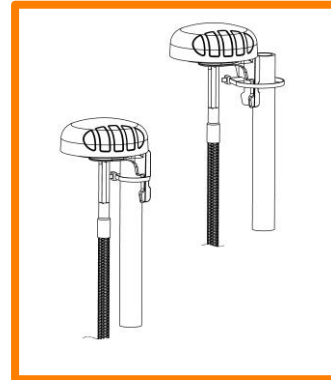
Poynting's new PUCK antenna range provides easy installation with the multiple mounting options. This includes as standard:

- Spigot Mount - two different lengths included (35mm & 75mm)
- Vertical Pole mount (inner & outer mounting for smaller and larger poles)
- Horizontal Pole Mount (e.g., marine rails)
- Magnetic Mount
- Surface Mount (Double Sided Tape)
- Wall Mount



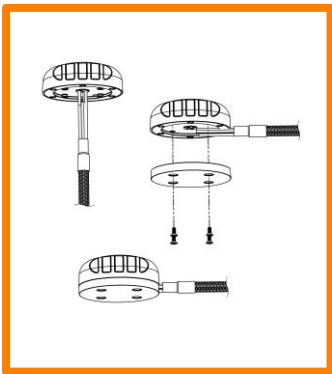
#### Spigot Mount

Removable 35mm & 75mm threaded spigot (included)



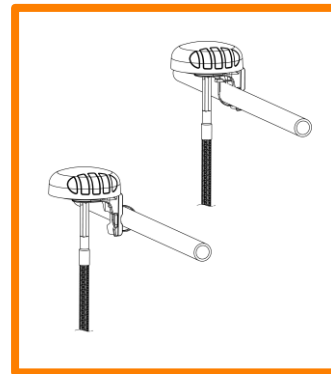
#### Vertical Pole Mount

Pole/Wall Mounting bracket (included)



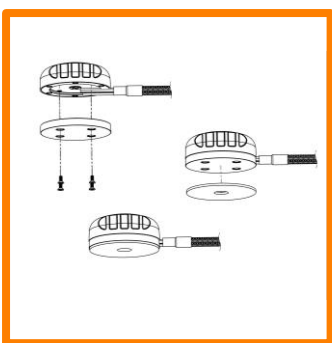
#### Magnetic Mount

Magnetic Base (included)  
For temporary and low mobility installations.



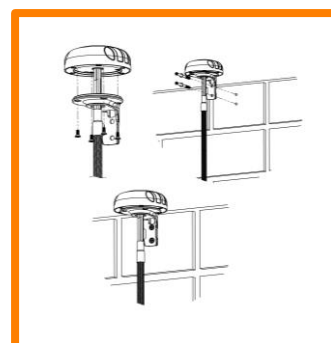
#### Horizontal Pole Mount

Pole/Wall Mounting bracket (included)



#### Surface Mount

Adhesive Surface Mounting (included) or can also be directly secured with longer M4 bolts (not included) to the female threaded inserts located in the antenna base



#### Wall Mount


Pole/Wall Mounting bracket (included)



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## Additional Accessories

See accessories technical specifications on [www.poynting.tech](http://www.poynting.tech)



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